Investor Relations Presentation

Needham Growth Conference

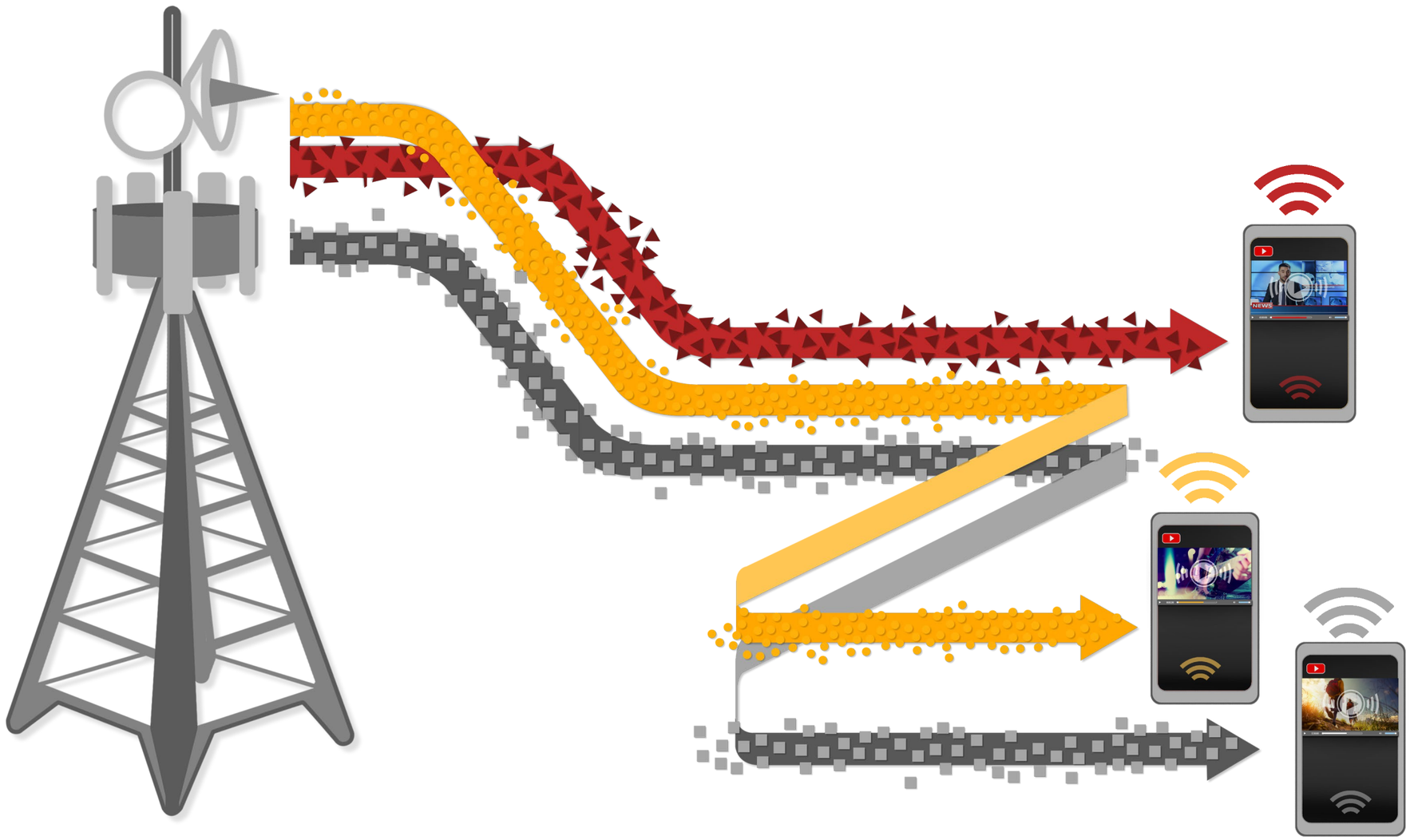
Jan 16, 2019

SAFE HARBOR STATEMENT

This document contains forward-looking statements. The words "believe," "may," "will," "potentially," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect" and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements. Forward-looking statements may address the following subjects among others: the status of filter designs under development, the prospects for licensing filter designs upon completion of development, plans for other filter designs not currently in development, potential customers for our designs, the timing and amount of future royalty streams, the expected duration of our capital resources, our hiring plans, the impact of our designs on the mobile device market, and our business strategy. Forward-looking statements are inherently subject to risks and uncertainties which could cause actual results to differ materially from those in the forward-looking statements, including, without limitation, the following: our limited operating history; our ability to complete designs that meet customer specifications; the ability of our customers (or their manufacturers) to fabricate our designs in commercial quantities; the ability of our customers to sell products incorporating our designs to OEMs; our dependence on a small number of customers; the ability of our designs to significantly lower costs as compared to other designs and solutions; the risk that the intense competition and rapid technological change in our industry renders our designs less useful or obsolete; our ability to find, recruit and retain the highly skilled personnel required for our design process in sufficient numbers to support our growth; our ability to manage growth; and general market, economic and business conditions. Additional factors that could cause actual results to differ materially from those anticipated by our forward-looking statements are under the captions "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our most recent Annual Report (Form 10-K) or Quarterly Report (Form 10-Q) filed with the Securities and Exchange Commission. Forward-looking statements are made as of the date of this document, and we expressly disclaim any obligation or undertaking to update forward-looking statements.

We may refer to information regarding potential markets for products and other industry data. We believe that all such information has been obtained from reliable sources that are customarily relied upon by companies in our industry. However, we have not independently verified any such information.

Next Generation Phones Are Dependent upon Increasing Demand for Bandwidth



RF Front End (RFFE) Ensures Voice, Data and Video Calls Are Delivered Correctly

Resonant is transforming the way RFFEs are Designed and Delivered

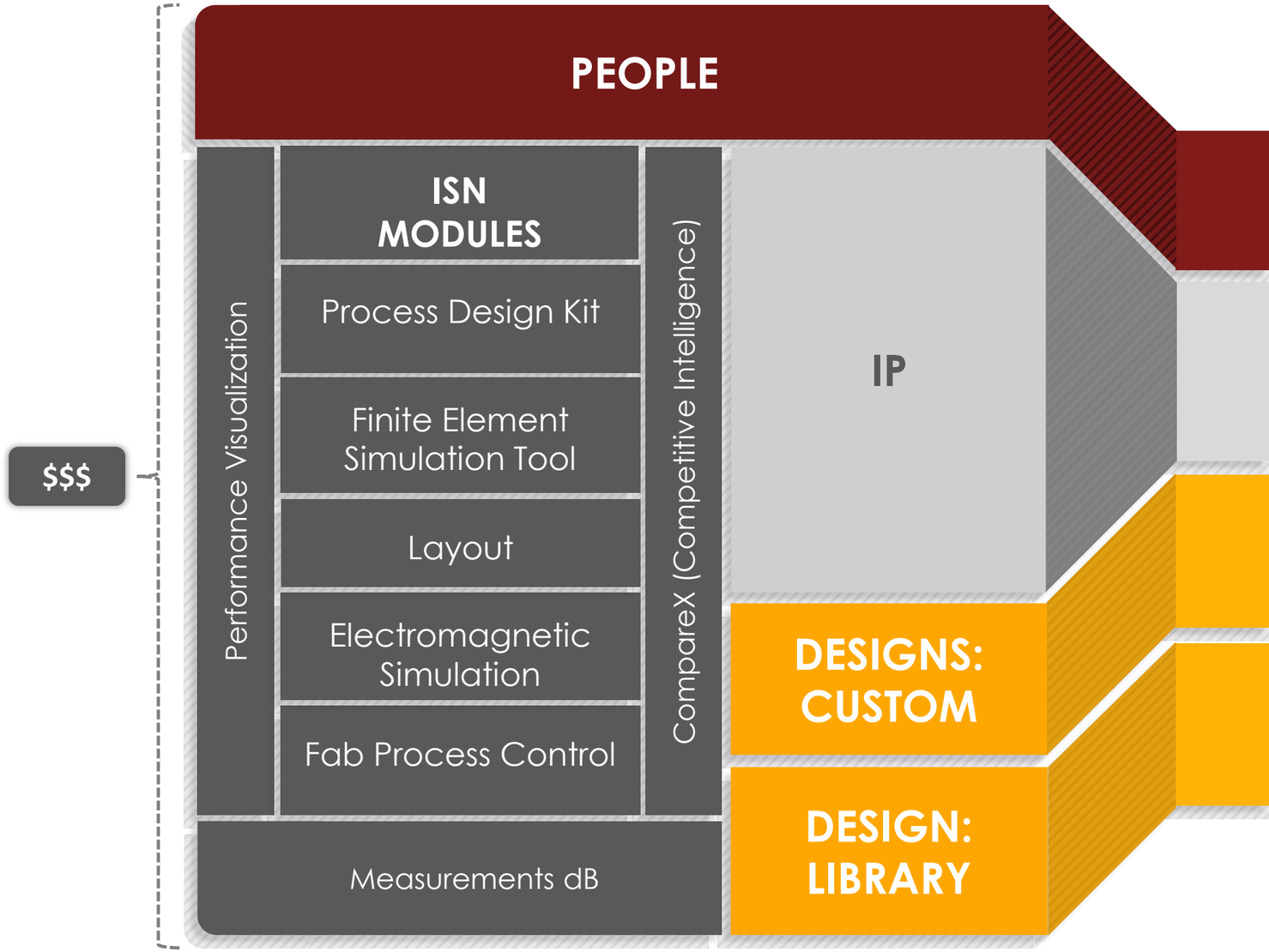
Resonant is the Only Pure Play Software & IP Growth Opportunity Focused on Mobile Filter Market

- **Filter market** is $9B today **growing to $28B** by 2025
  - Market will require **>3x number of filters**
  - **5G** is ramping
  - Filter companies are **constrained** by designer availability

- **Infinite Synthesized Network (ISN) software** creates designs faster, better, and cheaper
  - Design efficiency is up to **5x greater** than other filter designers
  - Design turns **reduced** by up to **10x**

- **IP and Trade Secrets** creating core value
  - Latest development **targeting 5G**

- **Business model**
  - **Licensing** based on filter sales



Sources: Yole Developpement

Summary of Company Stats

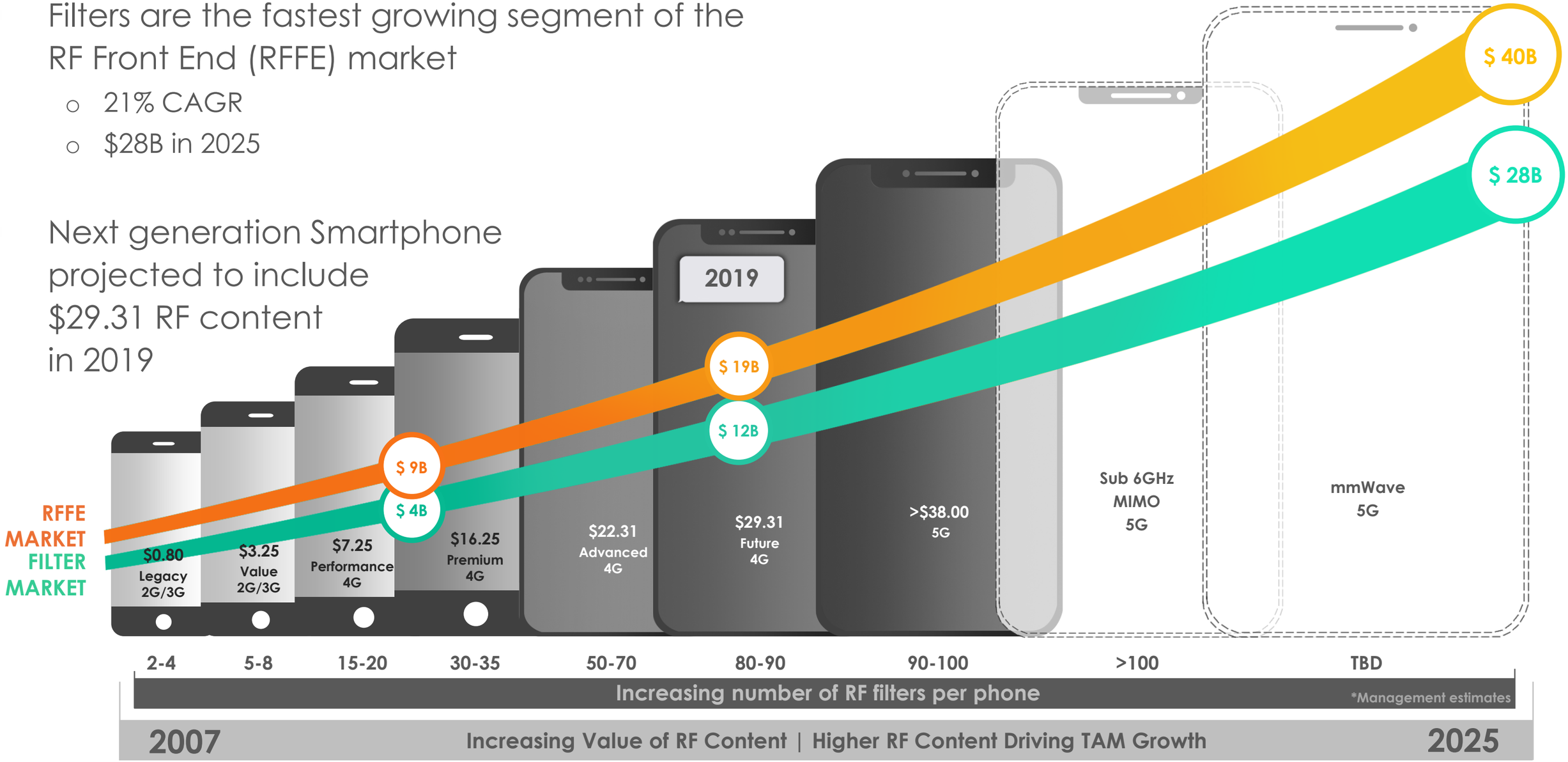
Corporate Overview

Founded:	May 2012
IPO:	May 2014
Employees:	65+ employees
Cash & investments:	$26.4M *as of September 30, 2018*
Business Model:	Licensing-Per Unit Royalty
Customers:	11 customers
Foundry Partners:	7 partners
Market Validation:	70+ devices contracted
Patents:	>165 filed or issued

RF Front End Enables Mobile Phone Growth

- Filters are the fastest growing segment of the RF Front End (RFFE) market
  - 21% CAGR
  - $28B in 2025

- Next generation Smartphone projected to include $29.31 RF content in 2019



Sources: Yole Developpement, Navian, Barclays, Management Estimates

5G's Impact on the RF Front End – Design Capacity

Design capacity must increase by up to 8x by 2025 to maintain share

Design capacity constrains market[1]

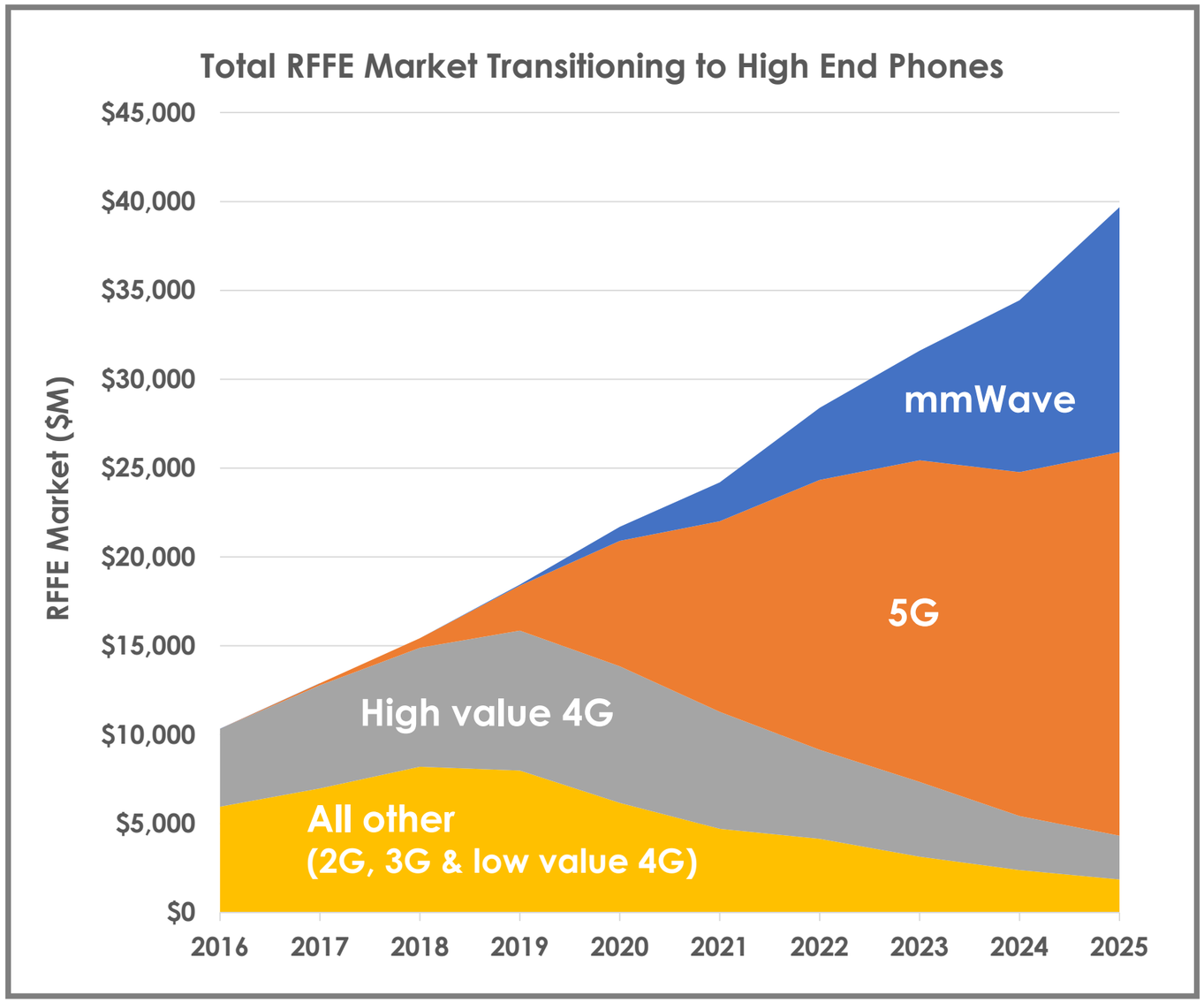
- Resonant is positioned to support entire RF spectrum with ISN platform; improving design efficiency by up to 5x

Legacy design methodology increases costs and slows development by utilizing fab turns to deliver designs

- Resonant's ISN platform enables fewer turns (up to 1-2) to deliver functional designs

High value 4G continues to be meaningful

- Resonant's Filter IP Standard Library of products enables new customer and suppliers to enter market



Sources: Yole Developpement, Management Estimates

1. Design capacity increase assumes for customer targeting current share in new phone market which has 3-4x greater filters per phone

5G's Impact on the RF Front End – Technology

5G demands larger bandwidth that is only available at higher frequency

5G Requirements	XBAR
Large bandwidth *100's of MHz vs. 10's of MHz*	✓
High frequency (3GHz - 80GHz) *Only frequencies where large bandwidths are available*	✓
Power handling *High frequency = less propagation* *Overcome with higher power to increase coverage*	✓
High quality factor, Q, of resonator structure *Determines rejection and loss of the filter* *Particularly challenging at high frequency*	✓

Based upon simulation results
Initial measured verification in process

What is XBAR?

- Proprietary resonator structure based on existing process technologies developed using ISN
  - IP/ XBAR based library products for 5G

ISN®: Next Generation Design Platform

CURRENT FILTER DESIGN
UTILIZED BY MOST MANUFACTURERS

Image Design
Acoustic Wave Ladder

Modern Filter Theory

Coupling of Modes Model | COM
Empirical Optimization & Simulation

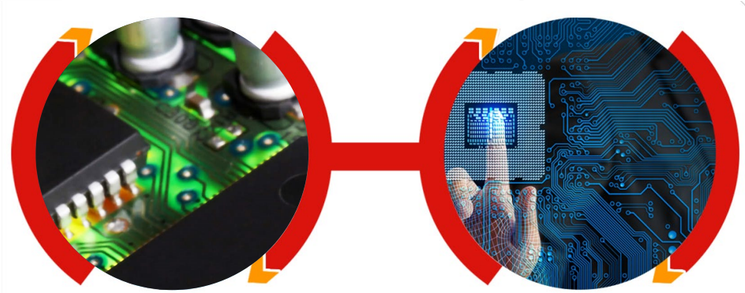
Aggregated Physical Properties
Velocity of Surface Waves
Reflectivity of Surface Waves

1900s — 1950s — 2000s

RESONANT
FUNDAMENTAL | RIGOROUS | SCALABLE | DEFENDABLE

Acoustic Wave Network Synthesis

RF Circuit Models — **Optimization**



Fundamental Physical Models — **Simulation**

RF Circuits
Inductance | Voltage → RF Circuit Integration

Fundamental Physical Properties
Density | Dimensions → Fab Integration

Today

Current filter design process:
- Many iterations: long / expensive
- Limited design space: Bandwidth, power
- Limited to "captive" fab

ISN Value:
Order of Magnitude Improvement in:
- Development time
- Cost

ISN® Impacts Design Efficiencies for All Filter Technologies

Development of Fully integrated SaaS-based Infinite Synthesized Network

2012 — 2016 — 2017 — 2018 — 2019 — 2020 — 2021

		% of Market Today	% of Market 2025
BAW		24%	54%
	IP Blocks	XBAR™	
	Software Enhancements	Layers II	
TC-SAW Multi-Layer		3%	7%
	IP Blocks	ODSR (Optimized Design Space Resonator)	
	Software Enhancements	Layers / PMTx™	
TC-SAW Bonded Wafer			
	IP Blocks	Plate Mode Engineered Device	
	Software Enhancements	FEMSAW / Layers	
SAW		73%	37%
	IP Blocks	Power Durability / Isolation	
	Software Enhancements	FEMSAW / PMTx™	

Sources: Yole Developpement, Navian

RESONANT IS TARGETING ENTIRE FILTER MARKET

Adv. Development and Filter IP Standard Library

Phone OEMs

- Allows control of strategic filter supply

LG Life's Good, Apple, HUAWEI, SAMSUNG, oppo, NOKIA, ZTE

New entrants requiring access to filters

Fabless

- Shorter time to market
- Lower cost

SPREADTRUM, MEDIATEK, UNISOC, HILSIN Total Solution Provider for EMI, Power and RF, Hangtian 灏天下, Lansus, QUALCOMM®

ISN Foundry Program

Foundry & Packaging

- Opens market to new entrants

TSMC, TST, SAWNICS, JRC New Japan Radio Co.,Ltd.

Initial target market

Vertically Integrated Manufacturers

- Existing channel to market
- Shorter time to market

qorvo, muRata, WISOL, KYOCERA, SKYWORKS, BROADCOM

- 11 customers
- 70+ complex filters, duplexers and quadplexers under contract
- >20 devices accepted by customers (includes handset testing)
- >10 products have shipped generating royalty revenue

2019 Builds on Momentum

2012 to 2015 — Foundation

- *Founded - > IPO*
- **Team:** 3 - 27
- **ISN®:** Launched
- **Customers:** 1
- **Devices Contracted:** 1
- **Mkt Val Cont's:** $0

2016 — Transformative Year

- *Acquired GVR*
- **Team:** 37
- **ISN®:** SAW
- **ISN Design Efficiency:** 3.0
- **Customers:** 6
- **Devices Contracted:** >25
- **Mkt Val Cont's[1]:** $250M

2017 — Validation Year

- *First 1 Million units Shipped*
- **Team:** 49
- **ISN®:** SAW, TC-SAW
- **Design Efficiency:** 4.5
- **Customers:** 8
- **Foundry & Pack Partners:** 5
- **Devices Contracted:** >50
- **Mkt Val Cont's:** $420M
- **Dev Shipped for RR:** 4
- **Dev Acc by Customers[2]:** >10

2018 — Expansion Year

- *Developed & Announced XBAR*
- *Announced 5G filter shipping*
- **Team:** 67
- **ISN®:** SAW, TC-SAW, BAW
- **Design Efficiency:** 6.8
- **Customers:** 11
- **Foundry & Pack Partners:** 7
- **Devices Contracted:** >70
- **Mkt Val Cont's:** $550M
- **Dev Shipped for RR:** >10
- **Dev Acc by Customers:** >20

2019 Target — Breakout Year

- *Focused on Ramping Royalty Revenues*
- *Demonstrate & Deploy 5G XBAR-based Filters*
- *OEM added to customer base*

KPI over year ranges from 14-100%

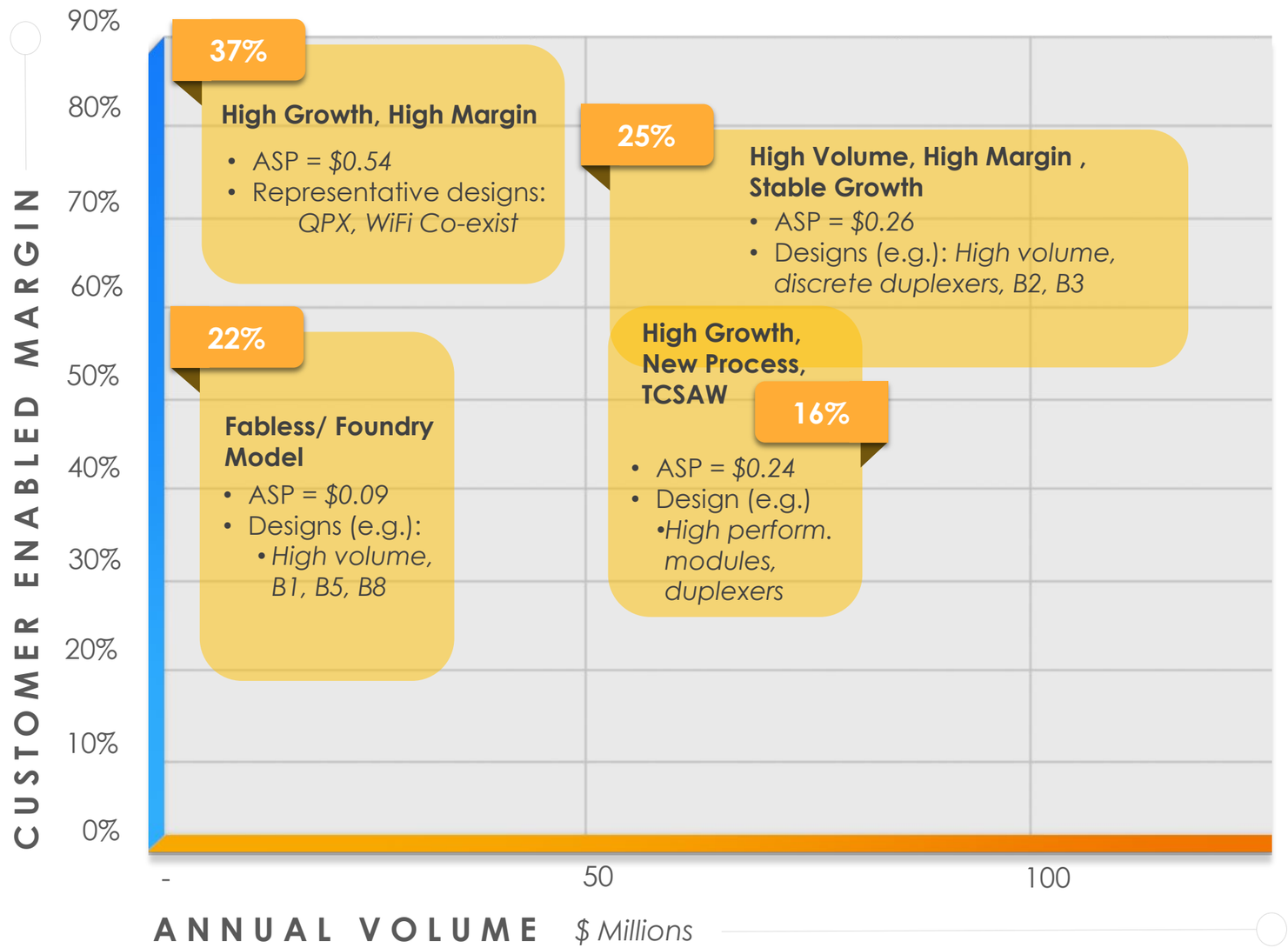
Average over year growth >40%

Sources: Yole Developpement, Navian

1. Device accepted by customer defined as customer has passed device handset testing
2. Design efficiency is the number ISN ready designs one designer can produce in a year. ISN ready designs use a qualified FAB process with industry competitive performance. A qualified FAB process includes confirmed performance with the FAB in the band

RESONANT IS TARGETING HIGH ASP & HIGH GROWTH SEGMENTS

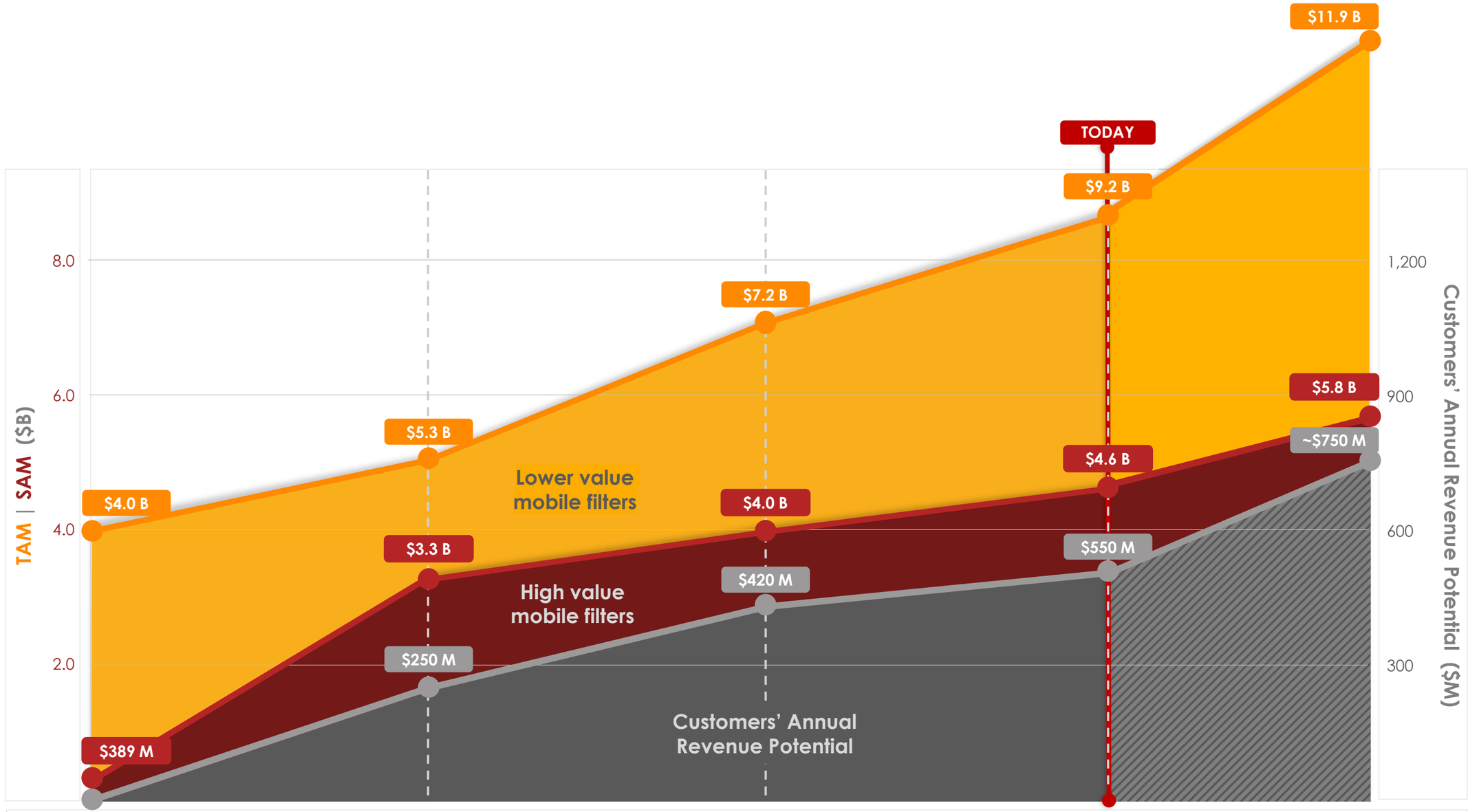
- **>20 designs accepted** by our customers
- **>10 products shipped** generating royalty revenue
- Contracted **royalty rates** generally in the range of 10% - 20%
- Targeting 30% - 70% success rate of contracted designs resulting in royalty
- Time from contract to customer acceptance varies based on technology, ranges between 6 and 18 months



% = % of current contracted devices

Sources: Yole Developpement, Navian

Potential Customer Annual Revenue Enabled by Resonant



YEARS	2015 YE	2016 YE	2017 YE	2018 YE	2019 YE
Devices Contracted		>25	>50	>70	>90
Revenue % of High Value Market		7.5%	10.6%	12.0%	12.9%

Customer Revenue Potential estimated using Navian published data, adjusted to reflect contracted customer data

Source: Navian and Yole Developpement

Executive Team

George Holmes

CEO & Director

30+ years leadership in sales & marketing and management

Marty McDermut

CFO

30+ years in financial and accounting management; CPA

Bob Hammond

CTO
& Co-founder

20+ years as Founder and CTO of STI;
Physics Ph.D. Caltech

Neal Fenzi

Executive Vice President of Engineering & Co-Founder

20+ years in engineering, operations and marketing positions at STI; BSEE

INDEPENDENT BOARD MEMBERS

John Major	Brett Conrad	Janet Cooper	Michael Fox	Alan Howe	Jack Jacobs	Josh Jacobs	Jean Rankin	Bob Tirva
Chairman & Independent Director	Independent Director	Independent Director	Independent Director	Independent Director	Independent Director	Independent Director	Independent Director	Independent Director
Multiple board memberships with public and private high-tech companies	Experience in building and selling companies. Capital markets expertise	Financial expertise in capital markets, audit, tax, accounting, treasury and risk-management	Financial expertise in capital markets, shareholder interests and strategy	Operational, corporate finance, business devt. and leadership exp. Strategic in-depth knowledge of the wireless, telecom, high technology and software industries	Public company, corporate governance and leadership experience	Extensive experience commercializing technologies	Governance, compliance, regulatory and licensing expertise within the semiconductor industry	Extensive corporate and managerial finance experience in IT & services and semiconductor industries

SUMMARY FINANCIAL INFORMATION

Sep 30, 2018		
		($ in M)
Cash, investments & equivalents	$	26.4
Other current assets		0.4
Long-term assets		4.2
Total assets	$	31.0
Total liabilities	$	2.7
Stockholders' equity		28.3
Total liabilities and stockholders' equity	$	31.0
Shares outstanding		27.0 M

no debt

SUMMARY

- Positioned for 2019
  - Cash and investments $26.4M *(Sept 30, 2018)*
  - More than 10 devices have shipped for royalty revenue; devices are in distribution and sampling to OEM's
  - Greater than 20 devices accepted by customers; acceptance criteria includes handset testing
  - Complete ISN software suite: ISN supports SAW, TC-SAW & BAW with new cutting edge IP focused on 5G – XBAR Resonantors
- Market continues to grow, 21% CAGR; RF front-end industry is undergoing dramatic increases in filter demand and complexity for bandwidth driven by:
  - Band Proliferation
  - Carrier Aggregation
  - 5G
- Resonant's revolutionary ISN® platform expected to disrupt the RFFE supply chain and enable new entrants into a market that has been dominated by only a few large players
- New BAW & XBAR solutions expected to deliver 5G designs through Filter IP Standard Library
- Resonant continues to retire risk through execution both internally and externally

Sources: Yole Developpement, Navian


RESONANT®